CLAIMS

I claim:

1. A display system comprising:

a temperature sensing circuit comprising a current source connected to a temperature sensing diode for providing an input to a voltage controlled oscillator (VCO) for generating a frequency output corresponding to said input voltage as a function of a temperature measurement by said temperature sensing diode.

2. The display system of claim 1 further comprising:

a resistor digital-to-analog converter (RDAC) for digitally controlling a voltage inputted to said VCO in place of the temperature sensing diode.

3. The display system of claim 1 wherein:

said temperature sensing circuit is disposed on a backplane of said display system.

4. A display system comprising:

a temperature sensing means including a means for generating an output frequency corresponding to a temperature measurement.

5. The display system of claim 4 wherein:

said temperature sensing means further comprising voltage controlled oscillator (VCO) for generating said output frequency.

6. The display system of claim 5 wherein:

said temperature sensing means further comprising a diode for passing a current for providing an input voltage to said VCO for generating said output frequency corresponding said temperature measurement.

7. The display system of claim 4 wherein:

said temperature sensing circuit further comprising at least two diodes of different sizes.

8. The display system of claim 4 wherein:

said temperature sensing means further comprising at least two current sources for providing two different currents.

9. The display system of claim 4 further comprising:

a resistor digital-to-analog converter (RDAC) for digitally controlling a voltage inputted to said VCO.

10. The display system of claim 4 further comprising:

a dividing-by-n (/n) circuit for modifying a frequency output from said VCO.

11. The display system of claim 4 further comprising:

a dividing-by-n (/n) circuit for modifying a frequency output from said VCO with a selectable value of n.

12. The display system of claim 4 further comprising:

a multiplexing circuit controlled by a controller for controlling a configuration of said temperature sensing means.

13. The display system of claim 12 wherein:

said temperature sensing means further comprising at least two diodes of different sizes having said multiplexing circuit connected thereto whereby said controller controlling said configuration by selecting either-or-both of said diodes.

14. The display system of claim 12 wherein:

said temperature sensing means further comprising at least two current sources for providing two different currents having said multiplexing circuit connected thereto whereby said controller controlling said configuration by selecting either-or-both of said current sources.

15. The display system of claim 12 further comprising:

a resistor digital-to-analog converter (RDAC) for digitally controlling a voltage inputted to said VCO having said multiplexing circuit connected thereto whereby said controller controlling said configuration by selecting an input from said RDAC to said VCO.

16. The display system of claim 12 further comprising:

a dividing-by-n (/n) circuit for modifying a frequency output from said VCO with a selectable value of n having said multiplexing circuit connected thereto whereby said controller controlling said configuration by selecting a value of said n.

17. A method for measuring a temperature in a display system comprising:

disposing a temperature sensing circuit on a backplane for generating a frequency output corresponding to a temperature measurement.

18. The method of claim 17 wherein:

said step of disposing said temperature sensing circuit on said backplane further comprising a step of disposing a diode temperature sensing means on said backplane.

19. The method of claim 17 wherein:

said step of disposing said temperature sensing circuit on said backplane further comprising a step of disposing two diode temperature sensing means on said backplane.

20. The method of claim 17 wherein:

said step of disposing temperature sensing circuit further comprising a step of disposing on said backplane a current source and a means for converting a measured current by said temperature sensing circuit to said frequency corresponding to said temperature measurement.

21. The method of claim 17 wherein:

said step of disposing said temperature sensing circuit on said backplane further comprising a step of disposing on said backplane a current source and a voltage control oscillator (VCO) for converting a measured current by said temperature sensing circuit to said frequency corresponding to said temperature measurement.

22. The method of claim 17 wherein:

said step of disposing said temperature sensing circuit on said backplane further comprising a step of disposing said temperature sensing circuit on a backplane of a liquid crystal microdisplay system.

23. A method for measuring a temperature in a display system comprising:

applying an independent adjustable voltage source on a voltage controlled oscillator (VCO) to determine a functional correlation between a frequency of the VCO and an input voltage to the VCO.

24. The method of claim 23 further comprising:

applying a temperature sensing voltage from a temperature sensing diode to said VCO to generate a temperature corresponding output frequency from the VCO.

25. The method of claim 24 further comprising:

using said frequency-voltage functional correlation and said output frequency of said VCO to determine said temperature sensing voltage across the temperature sensing diode.

26. The method of claim 25 further comprising:

determining a temperature measurement from said temperature sensing voltage across said temperature sensing diode.

27. A display system comprising:

a temperature sensing circuit disposed on a backplane wherein said temperature sensing circuit comprising at leas two diodes for measuring a same local temperature on said backplane.